Amendments to the Specification:

Please replace the paragraph beginning at line 5 on page 5 with the following amended paragraph:

Fig. 1 shows a dual polarization sensor array with 2 p sensors elements by way of example of a system 1 according to the invention. The system 1 is able to perform the example of a method according to the invention illustrated in fig. 2. In fig. 1, three point-like sources 2_1, 2_2, 2_3, emit consecutively each a signal 3_1, 3_2, 3_3 to the system 1. In step 101 in figure 3, each of the three consecutive signals 3_1, 3_2, 3_3 is observed separately by a number of dual polarization sensor elements $4_1, 4_2, \ldots, 4_p$ (p representing the total number of dual polarization sensor elements) of a sensor array 4, which may for example (but not necessarily) be an uniform linear sensor array. The outputs of the sensor elements $4_1, 4_2, \ldots, 4_p$ are connected to inputs 51 of a gain calibration device 5. The outputs of the sensor array are further, as indicated with the striped lines to a, not shown, beamformer device as is for example known in the arts of radars, acoustic arrays, and radio-astronomy.

Please replace the paragraph beginning at line 17 on page 5 with the following amended paragraph:

The output signals $\boldsymbol{x}(t)$ contain the input signal s(t) of a single source multiplied with a (complex) number $\boldsymbol{a}_\tau$ which represents the path time delay for the respective sensor elements 4_i. The signal s(t) is also multiplied with a gain factor G_i of the respective sensor element 4_i. The

output signal $x_i(t)$ also comprises system noise $d_i(t)$ added in each sensor element 4_i to the signal s(t).

Please replace the paragraph beginning at 4 on page 6 with the following amended paragraph:

Connected to the vectoriser device 52 is a correlator device 53 which is able to cross-correlate, in step 105 in fig. 3, elements in the output vector $\mathbf{x}(t)$. In the shown correlator device 53, a covariance matrix is formed by determining the covariance of the element outputs $x_i(t)$. However other correlation methods may be used as well. After steps 101-105, the gain parameters, as represented by a matrix $\boldsymbol{G}$ of size 2p×2 (except for an arbitrary phase offset term), are estimated in steps 106-108 and further, by solving cost functions, each cost function corresponding to a different one of the input signals 3_1, 3_2, 3_3.